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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/526,483	Applicant(s) MOCHIZUKI ET AL.	
	Examiner Linzy McCartney	Art Unit 2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 March 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 6-8 are rejected. Claim 1 recites the limitation "...the other objects." There is insufficient antecedent basis for this limitation in the claim. Claims 6-8 depend from the rejected claim 1 and include all of the limitations of claim 1 thereby rendering these dependent claims indefinite. All subsequent recitations of the aforementioned limitation are also rejected

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-7, 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuba et al., "*"Bottom Thou Art Translated": The Making of VRML Dream* " (Matsuba) in view of Carson et al., "Multicast Shared Virtual Worlds Using VRML97" (Carson).

a. Referring to claim 1, Matsuba discloses stream data receiving means for receiving a plurality of stream data for controlling a dynamic virtual space, according to the type of each data (page 50, column 1, paragraphs 2-3 and Figure 5); and control data output means for outputting the control data input by the manual data input means, for the object controlled by the manual data input means, and outputting the stream data received by the

stream data receiving means, for the other objects (page 50, column 1, paragraphs 1-2). Matsuba also discloses a manual data input means for inputting control data for an object to be controlled in the virtual space (page 49, column 2, paragraphs 1-2); Matsuba does not explicitly disclose that the virtual space control apparatus that contains the stream data receiving also contains the manual data input means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the manual data input means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

b. Referring to claim 2, Matsuba discloses a virtual space control data receiving apparatus comprising stream data receiving means for receiving a plurality of stream data for controlling a dynamic virtual space, according to the type of each data (page 50, column 1, paragraphs 2-3 and Figure 5); and control data output means for outputting the control data input by the manual data input means, for the object selected by the manual data input means, and outputting the stream data received by the stream data receiving means, for the other objects (page 50, column 1, paragraphs 1-2) . Matsuba also discloses a manual data input means for inputting selection data for selecting an object to be controlled in the virtual space (page 49, column 2, paragraphs 1-2). Matsuba does not explicitly disclose that the virtual space control apparatus that contains the stream data

receiving also contains the manual data input means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the manual data input means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

c. Claim 3 is rejected per claim 2. Referring to claim 3, Matsuba discloses manual control data conversion means for converting the control data input by the manual data input means, into control data suited to the object selected by the manual data input means (page 49, column 2, paragraphs 1-2); and control data output means for outputting the control data converted by the manual control data conversion means, for the object selected by the manual data input means, and outputting the stream data received by the stream data receiving means, for the other objects (page 50, column 1, paragraphs 1-2). Matsuba does not explicitly disclose that the virtual space control apparatus that contains the control data conversion means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the control data conversion means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would

reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

d. Claim 4 is rejected per claim 2. Referring to claim 4, Matsuba discloses a virtual space control data receiving apparatus comprising a manual data transmission means for transmitting the selection data and control data which are input by the manual data input means, to another virtual space control data receiving apparatus (page 50, column 1, paragraphs 2-3 and Figure 5); and control data output means for outputting the control data input by the manual data input means, for the object selected by the manual data input means (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba also discloses manual data receiving means for receiving selection data and control data which are input to another virtual space control data receiving means (page 50, column 1, paragraphs 2-3 and Figure 5) and outputting the control data received by the manual data receiving means, for the object controlled by the selection data output from the manual data receiving means, and outputting the stream data received by the stream data receiving means, for the other objects (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba does not explicitly disclose that the virtual space control apparatus that contains the manual data transmission means also contains the manual data receiving means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the manual data receiving means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column

2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

e. Claim 5 is rejected per claim 3. Referring to claim 5, Matsuba discloses a virtual space control data receiving apparatus comprising a manual data transmission means for transmitting the selection data and control data which are input by the manual data input means, to another virtual space control data receiving apparatus (page 50, column 1, paragraphs 2-3 and Figure 5); and control data output means for outputting the control data converted by the manual control data conversion means, for the object selected by the manual data input means and outputting the stream data received by the stream data receiving means, for the other objects (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba also discloses manual control data conversion means for converting the control data input by the manual data input means, into control data suited to the object selected by the manual data input means (page 49, column 2, paragraphs 1-2) and manual data receiving means for receiving selection data and control data which are input to another virtual space control data receiving means (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba does not explicitly disclose that the virtual space control apparatus that contains the manual data transmission means also contains the manual data receiving means or manual control data conversion means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the manual data receiving means and manual control data conversion means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so

would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

f. Claim 6 is rejected per claim 1. Referring to claim 6, Matsuba discloses scene data generation means for generating scene data for constituting the virtual space from the data output from the control data output means (page 50, column 2, paragraphs 3-4 and Figure 1); drawing means for generating image data on the basis of the scene data generated by the scene data generation means (page 50, column 2, paragraphs 3-4 and Figure 1); and display means for displaying the image data generated by the drawing means (Figure 1). Matsuba does not explicitly disclose that the virtual space control apparatus comprises scene data generation means, drawing means, or display means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the scene data generation means, drawing means, and display means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

g. Claim 7 is rejected per claim 6. Referring to claim 7, Matsuba discloses audio output means for outputting audio on the basis of the data output from the control data output means (page 45, column 1, paragraphs 1-2). Matsuba does not explicitly disclose

that the virtual space control apparatus comprises audio output means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the audio output means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

h. Referring to claim 9, Matsuba discloses stream data receiving means for receiving stream data, and dividing the stream data into motion stream data and other stream data to be output (page 50, column 2, paragraphs 4-5); manual data input means for inputting motion data of an object or a part of an object to be motion-controlled manually (page 49, column 2, paragraphs 1-2); motion control data output means for outputting, as scene generation motion data, the motion data supplied from the manual control data input means, for the object or part to be controlled with the motion data which is input by the manual control data input means, and outputting the motion stream data supplied from the stream data receiving means, for the other objects or parts (page 50, column 1, paragraphs 1-2). Matsuba does not explicitly disclose that the virtual space control apparatus comprises stream data receiving means for dividing the stream data into motion stream data and other stream data to be output or manual control data input means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the stream data receiving means and manual control data input

means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

i. Claim 10 is rejected per claim 9.Referring to claim 10, the modified method of Matsuba as applied to claim 9 above the limitations recited in claim 10 including control object selection means for inputting selection data for selecting an object or a part of an object, which is to be motion-controlled manually (page 49, column 2, paragraphs 1-2); manual control data input means for inputting motion data for the object or part selected by the control object selection means (page 49, column 2, paragraphs 1-2); and motion control data output means for outputting as scene generation data, the motion data supplied from the manual control data input means, for the object or part selected by the control object selection means, and outputting the motion stream data supplied from the stream data receiving means for the other objects or parts (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba does not explicitly disclose that the virtual space control apparatus comprises control object selection means or manual data input means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the control object selection means and manual data input means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability

problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

j. Referring to claim 11, Matsuba discloses stream data receiving means for receiving stream data, and dividing the stream data into motion stream data and other stream data to be output (page 50, column 2, paragraphs 4-5); manual control data input means for inputting motion data for the object or part selected by the control object selection means (page 49, column 2, paragraphs 1-2); manual control data conversion means for converting the control data input by the manual data input means, into control data suited to the object or part to be controlled (page 49, column 2, paragraphs 1-2) and motion control data output means for outputting as scene generation data, the motion data supplied from the manual control data input means, for the object or part to be controlled with the control data which is input by the manual control data input means, and outputting the motion stream data supplied from the stream data receiving means for the other objects or parts (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba does not explicitly disclose that the virtual space control apparatus comprises manual control data conversion means or manual data input means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the manual control data conversion means and manual data input means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2,

paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

k. Claim 12 is rejected per claim 11. Referring to claim 12, Matsuba discloses control object selection means for inputting selection data for selecting an object or a part of an object, which is to be motion-controlled manually (page 49, column 2, paragraphs 1-2); manual control data input means for inputting motion data for the object or part selected by the control object selection means (page 49, column 2, paragraphs 1-2); motion control data output means for outputting as scene generation data, the motion data supplied from the manual control data conversion means, for the object or part selected by the control object selection means, and outputting the motion stream data supplied from the stream data receiving means for the other objects or parts (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba does not explicitly disclose that the virtual space control apparatus comprises control object selection means or manual data input means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the control object selection means and manual data input means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

l. Claim 13 is rejected per claim 9. Referring to claim 13, Matsuba discloses manual control data transmission means for transmitting motion data of an object or a part of an object to be controlled, which is input by the manual control data input means, to the outside (page 50, column 1, paragraphs 2-3 and Figure 5); manual data receiving means for receiving motion data of an object or a part of an object to be controlled, which is transmitted from the outside (page 50, column 1, paragraphs 2-3 and Figure 5); and manual control data output means for outputting, as scene generation data, the motion data output from the manual control data input means, for the object or part to be controlled by the manual control data input means page 50, column 1, paragraphs 2-3 and Figure 5), and outputting the motion data received by the motion control data receiving means, for the object or part to be controlled by the motion data received by the manual control data receiving means (page 50, column 1, paragraphs 2-3 and Figure 5), and outputting the motion stream output from the stream data receiving means, for the other objects or parts (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba does not explicitly disclose that the virtual space control apparatus comprises manual control data receiving means or outputting the motion data received by the motion control data input means, and outputting the motion data received by the motion control data receiving means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the manual control data receiving means and outputting the motion data received by the motion control data input means, and outputting the motion data received by the motion control data receiving means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for

doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

m. Claim 14 is rejected per claim 10. Referring to claim 14, Matsuba discloses manual control data transmission means for transmitting motion data of an object or a part of an object to be controlled, which is input by the manual control data input means, to the outside (page 50, column 1, paragraphs 2-3 and Figure 5); manual data receiving means for receiving motion data of an object or a part of an object to be controlled, which is transmitted from the outside (page 50, column 1, paragraphs 2-3 and Figure 5); selection data transmission means for transmitting the selection data input by the control object selection means, to the outside (page 50, column 1, paragraphs 2-3 and Figure 5); selection data receiving means for receiving selection data transmitted from the outside (page 50, column 1, paragraphs 2-3 and Figure 5); and motion control data output means outputting, as scene generation motion data, the motion data output from the manual control data input means, for the object or part selected by the control object selection means, and outputting the motion data received by the manual control data receiving means, for the object or part selected by the selection data output from the selection data receiving means, and outputting the motion stream data output from the stream data receiving means for the other objects or parts (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba does not explicitly disclose that the virtual space control apparatus comprises manual control data receiving means or outputting the motion data received by

the motion control data input means, and outputting the motion data received by the motion control data receiving means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the manual control data receiving means and outputting the motion data received by the motion control data input means, and outputting the motion data received by the motion control data receiving means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

n. Claim 15 is rejected per claim 11. Referring to claim 15, Matsuba discloses a virtual space control data receiving apparatus comprising a manual data transmission means for transmitting the selection data and control data which are input by the manual data input means, to the outside (page 50, column 1, paragraphs 2-3 and Figure 5); and motion control data output means for outputting, as scene generation motion data, the motion data output from the manual control data conversion means, for the object or part to be controlled with the control data input means and the object or part to be controlled by the control data received by the manual control data receiving means, and outputting the stream data supplied by the stream data receiving means, for the other objects (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba also discloses manual control data conversion means for converting the control data input by the manual data input means and the control data received by the manual control data receiving means, into motion

data suited to the objects or parts to be controlled (page 49, column 2, paragraphs 1-2) and manual data receiving means for receiving control data of an object or part to be controlled, which is transmitted from the outside (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba does not explicitly disclose that the virtual space control apparatus that contains the manual data transmission means also contains the manual control data receiving means or manual control data conversion means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the manual data receiving means and manual control data conversion means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

o. Claim 16 is rejected per claim 12. Referring to claim 16, Matsuba discloses manual control data transmission means for transmitting motion data of an object or a part of an object to be controlled, which is input by the manual control data input means, to the outside (page 50, column 1, paragraphs 2-3 and Figure 5); manual data receiving means for receiving control data of an object or a part of an object to be controlled, which is transmitted from the outside (page 50, column 1, paragraphs 2-3 and Figure 5); selection data transmission means for transmitting the selection data input by the control object selection means, to the outside (page 50, column 1, paragraphs 2-3 and Figure 5); selection data receiving means for receiving selection data transmitted from the outside

(page 50, column 1, paragraphs 2-3 and Figure 5); and motion control data output means outputting, as scene generation motion data, the motion data output from the manual control data conversion means, for the objects or parts selected by the selection data from the control object selection means and the selection data receiving means, and outputting the motion stream data output from the stream data receiving means, for the other objects or parts. (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba also discloses manual control data conversion means for converting the control data input by the manual control data input means and the control data received by the manual control data receiving means, into motion data suited to the objects or parts selected by the selection data output from the control object selection means and the selection data receiving means(page 49, column 2, paragraphs 1-2) Matsuba does not explicitly disclose that the virtual space control apparatus comprises manual control data conversion means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the manual control data receiving means and outputting the motion data received by the motion control data input means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

p. Claim 22 is rejected per claim 11. Referring to claim 22, Matsuba discloses physical calculation for expressing physical characteristics of the selected object or part is

used when the manual control data conversion means converts the inputted control data to motion data of an object of a part of an object (page 49, column 2, paragraphs 1-2).

q. Claim 23 is rejected per claim 9. Referring to claim 23, Matsuba discloses scene data generation means for generating scene data for constituting the virtual space from the data output from the control data output means (page 50, column 2, paragraphs 3-4 and Figure 1); drawing means for generating image data on the basis of the scene data generated by the scene data generation means (page 50, column 2, paragraphs 3-4 and Figure 1); and display means for displaying the image data generated by the drawing means (Figure 1). Matsuba does not explicitly disclose that the virtual space control apparatus comprises scene data generation means, drawing means, or display means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the scene data generation means, drawing means, and display means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

r. Referring to claim 24, Matsuba discloses a plurality of virtual space control data receiving apparatuses (page 50, column 1, paragraphs 2-3 and Figure 5); stream data receiving means for receiving the stream data transmitted from the virtual space control data transmission apparatus, in accordance with the type of the stream data (page 50, column 1, paragraphs 2-3 and Figure 5); manual data input means for inputting selection

data for selecting an object to be controlled in the virtual space, and control data for the selected (page 49, column 2, paragraphs 1-2); manual data transmission means for transmitting the selection data and the control data input by the manual data input means, to another virtual space control data (page 50, column 1, paragraphs 2-3 and Figure 5); manual data receiving means for receiving selection data and control data input to another virtual space control data receiving apparatus; (page 50, column 1, paragraphs 2-3 and Figure 5); and control data output means for outputting the control data input by the manual data input means, for the object selected by the manual data input means, and outputting the control data received by the manual data receiving means, for the object selected by the selection data of the manual data receiving means, and outputting the stream data received by the stream data receiving means, for the other objects (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba does not explicitly disclose that the virtual space control apparatus that contains the manual data transmission means also contains the manual data receiving means or manual control data conversion means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the manual data receiving means and manual control data conversion means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

s. Referring to claim 25, Matsuba discloses a plurality of virtual space control data receiving apparatuses (page 50, column 1, paragraphs 2-3 and Figure 5); manual control data transmission means (page 50, column 1, paragraphs 2-3 and Figure 5); stream data receiving means for receiving the stream data transmitted from the virtual space control data transmission apparatus, in accordance with the type of the stream data (page 50, column 1, paragraphs 2-3 and Figure 5); manual data input means for inputting selection data for selecting an object to be controlled in the virtual space, and control data for the selected (page 49, column 2, paragraphs 1-2); manual data transmission means for transmitting the selection data and the control data input by the manual data input means, to the manual control data transmission means (page 50, column 1, paragraphs 2-3 and Figure 5); manual data receiving means for receiving selection data and control data input to another virtual space control data receiving apparatus, which data are transmitted from the manual control data transmission means; (page 50, column 1, paragraphs 2-3 and Figure 5); and control data output means for outputting the control data input by the manual data input means, for the object selected by the manual data input means, and outputting the control data received by the manual data receiving means, for the object selected by the selection data of the manual data receiving means, and outputting the stream data received by the stream data receiving means, for the other objects (page 50, column 1, paragraphs 2-3 and Figure 5). Matsuba does not explicitly disclose that the virtual space control apparatus that contains the manual data transmission means also contains the manual data receiving means or manual control data conversion means. At the time the invention was made it would have been obvious to a person of ordinary skill

in the art to incorporate the manual data receiving means and manual control data conversion means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

t. Claim 26 is rejected with the rationale of the rejection of claim 1. Claim 26 is merely claim 1 recited as a method.

u. Claim 27 is rejected with the rationale of the rejection of claim 2. Claim 27 is merely claim 2 recited as a method.

v. Claim 28 is rejected with the rationale of the rejection of claim 9. Claim 28 is merely claim 9 recited as a method.

w. Claim 29 is rejected with the rationale of the rejection of claim 11. Claim 29 is merely claim 11 recited as a method.

x. Claim 30 is rejected with the rationale of the rejection of claim 1. Claim 30 is merely claim 1 recited as a program.

y. Claim 31 is rejected with the rationale of the rejection of claim 2. Claim 31 is merely claim 2 recited as a program.

z. Claim 32 is rejected with the rationale of the rejection of claim 9. Claim 32 is merely claim 9 recited as a program.

aa. Claim 33 is rejected with the rationale of the rejection of claim 11. Claim 33 is merely claim 11 recited as a program.

bb. Claim 34 is rejected per claim 2. Matsuba discloses scene data generation means for generating scene data for constituting the virtual space from the data output from the control data output means (page 50, column 2, paragraphs 3-4 and Figure 1); drawing means for generating image data on the basis of the scene data generated by the scene data generation means (page 50, column 2, paragraphs 3-4 and Figure 1); and display means for displaying the image data generated by the drawing means (Figure 1). Matsuba does not explicitly disclose that the virtual space control apparatus comprises scene data generation means, drawing means, or display means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the scene data generation means, drawing means, and display means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

cc. Claim 37 is rejected per claim 11. Matsuba discloses scene data generation means for generating scene data for constituting the virtual space from the data output from the control data output means (page 50, column 2, paragraphs 3-4 and Figure 1); drawing means for generating image data on the basis of the scene data generated by the scene data generation means (page 50, column 2, paragraphs 3-4 and Figure 1); and display means for displaying the image data generated by the drawing means (Figure 1). Matsuba does not explicitly disclose that the virtual space control apparatus comprises scene data

generation means, drawing means, or display means. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the scene data generation means, drawing means, and display means into the virtual space control data receiving apparatus of Matsuba. The suggestion/motivation for doing so would have been to replace the client\server system with a multicasting system (Matsuba, page 50, column 2, paragraph 3) which would reduce scalability problems (Carson, column 2, paragraph 4) and allow the creation of a multi-user (shared) virtual world utilizing VRML (Carson, column 1, paragraph 2).

5. Claims 8, 17-18, and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuba in view of Carson as applied to claims 1, 9, 11, 13, and 15 above further in view of Naka et al., "A Compression/Decompression Method for Streaming Based Humanoid Animation" (Naka).

a. Referring to claim 8, the modified method of Matsuba as applied to claim 1 above meets the limitations recited in claim 8 except "...control data output means outputs the control data...in synchronization with the stream data for the other objects". Naka discloses utilizing a time stamp to maintain synchronization between the server and client (page 66, column 2 paragraph 2). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to synchronize the output of motion control data as taught by Naka. The suggestion/motivation for doing so would have been to make real time playback of computer graphic character possible (Naka, page 66, column 2, paragraph 2 and Matsuba page 50, column 2, paragraph 1).

b. Referring to claim 17, the modified method of Matsuba as applied to claim 9 above meets the limitations recited in claim 17 except "...motion control data output means outputs the scene generation data...in synchronization with the scene generation motion data for the other objects or parts." Naka discloses utilizing a time stamp to maintain synchronization between the server and client (page 66, column 2 paragraph 2). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to synchronize the output of motion control data as taught by Naka. The suggestion/motivation for doing so would have been to make real time playback of computer graphic character possible (Naka, page 66, column 2, paragraph 2 and Matsuba page 50, column 2, paragraph 1).

c. Referring to claim 18, the modified method of Matsuba as applied to claim 13 above meets the limitations recited in claim 18 except "...motion control data output means outputs the scene generation data...in synchronization with the scene generation motion data for the other objects or parts." Naka discloses utilizing a time stamp to maintain synchronization between the server and client (page 66, column 2 paragraph 2). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to synchronize the output of motion control data as taught by Naka. The suggestion/motivation for doing so would have been to make real time playback of computer graphic character possible (Naka, page 66, column 2, paragraph 2 and Matsuba page 50, column 2, paragraph 1).

d. Claim 35 is rejected per claim 11. Referring to claim 35, the modified method of Matsuba as applied to claim 11 above meets the limitations recited in claim 35 except

"...motion control data output means outputs the scene generation data...in synchronization with the scene generation motion data for the other objects or parts." Naka discloses utilizing a time stamp to maintain synchronization between the server and client (page 66, column 2 paragraph 2). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to synchronize the output of motion control data as taught by Naka. The suggestion/motivation for doing so would have been to make real time playback of computer graphic character possible (Naka, page 66, column 2, paragraph 2 and Matsuba page 50, column 2, paragraph 1).

e. Claim 36 is rejected per claim 15. Referring to claim 36, the modified method of Matsuba as applied to claim 15 above meets the limitations recited in claim 35 except "...motion control data output means outputs the scene generation data...in synchronization with the scene generation motion data for the other objects or parts." Naka discloses utilizing a time stamp to maintain synchronization between the server and client (page 66, column 2 paragraph 2). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to synchronize the output of motion control data as taught by Naka. The suggestion/motivation for doing so would have been to make real time playback of computer graphic character possible (Naka, page 66, column 2, paragraph 2 and Matsuba page 50, column 2, paragraph 1).

6. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuba in view of Carson as applied to claim 11 above further in view of U.S. Patent No. 5,793,356 to Svancarek et al. (Svancarek).

a. Referring to claim 19, the modified apparatus of Matsuba as applied to claim 11 above meets the limitations recited in claim 19 except "...tabled conversion data are used when the manual control data conversion means converts the inputted control data to motion data of an object of a part of an object". Svancarek discloses using tabled conversion data to convert manual control data to motion data (column 12, line 66 – column 13, line 17) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate in the apparatus of Matsuba the tabled conversion data of Svancarek. The suggestion/motivation for doing so would have been to increase the speed of the conversion process.

b. Referring to claim 20, the modified apparatus of Matsuba as applied to claim 11 above meets the limitations recited in claim 20 except "...tabled key conversion data are interpolated..." Svancarek discloses using tabled conversion data to convert manual control data to motion data (column 12, line 66 – column 13, line 17). Svancarek does note explicitly disclose interpolating conversion data, however it is well known to interpolate to find values that fall between values in a table. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate in the apparatus of Matsuba the tabled conversion data of Svancarek. The suggestion/motivation for doing so would have been to increase the speed of the conversion process.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuba in view of Carson as applied to claim 11 further in view of U.S. Patent No. 5,288,993 to Bidiville et al. (Bidiville).

a. Referring to claim 21, the modified apparatus of Matsuba as applied to claim 11 above meets the limitations recited in claim 21 except "...wherein a neural network which has learned in advance is used when the manual control data conversion means converts..." Bidiville discloses using a neural network to convert the movement of the trackball into X and Y components for movement of the cursor on the video display (column 2, lines 49-545). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate into the apparatus of Matsuba the neural network of Bidiville. The suggestion/motivation for doing so would have been to increase the speed of the conversion process.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure..

Electronic Cafe International, "The Encounter", 1/19/1998, pp. 1-3

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Linzy McCartney** whose telephone number is **(703) 605-0745**. The examiner can normally be reached on Mon-Friday (8:00AM-5: 30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at **(703) 305-9798**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

ltm
January 8, 2003

MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600